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*International Academy of Oral
Medicine & Toxicology
recommends a number of
precautions to protect dental
workers from mercury
exposure, including respiratory
protection and vacuum hoses to
remove mercury vapor.*

From *Cal-OSHA Reporter*, March 31, 2008. Article by reporter Kevin Thompson

Mercury's Workplace Bite

Dental groups press Cal/OSHA for new protections for workers from a substance found in the teeth of millions of patients - and that can pose a hazard when disturbed. What do they have in mind and what does the research say about the mercury exposure? Drill into the details in this week's *Cal-OSHA Reporter*.

Dental Groups Call On Standards Board To Protect Workers From Mercury

GLENDALE – It becomes "molten" at room temperature, can be found in the mouths of millions of Californians and poses an ongoing threat to dental workers, according to advocates for greater protection from the mercury used in cavity-filling materials.

The advocates, who have submitted two petitions to the board to deal with the substance, appeared en masse at the Cal-OSH Standards Board March 20 meeting here, pressing their case with emotional testimony and scientific studies they say make a compelling case that workers are in danger, especially pregnant ones.

Consumers for Dental Choice (CDC), a Washington, D.C.-based organization, petitioned the board to ban further implants of mercury-based dental fillings and also to require engineering and other controls to protect dentists and workers who must work on or remove existing fillings.

Amalgams containing mercury are used less and less for fillings and mostly on lower-income patients, according to Charles Brown, national counsel for CDC. Dentists continue to use the material because it is not in their economic interest to use higher-cost resins. Medi-Cal reimburses them at the same rate no matter what material they use, he said. New-age resins are about 25% more expensive because they are "technique-sensitive," according to dentist Chet Yokoyama. But advocates say the cost will come down as more practitioners use them and become proficient.

Mercury is the most volatile and toxic of the heavy metals, Brown told the board. When a dentist breaks open an amalgam capsule, "the exposure is massive." The metal also volatilizes when teeth are polished and when such fillings are placed and removed. "We'll be removing them for a generation," Brown said. "We've all got them."



*Dental hygienist
Victoria DaCosta: "I
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workplace."*

The threat is especially great to pregnant women, CDC says. "The current science indicates that female dental personnel are severely impacted by occupational exposure to mercury," its petition states. Occupational limits call for "no exposure to fertile women to amounts of mercury greater than 10 micrograms per cubic meter of air, and pregnant women should not be occupationally exposed to mercury."

"These recommendations are not being followed by the dental industry and there is substantial evidence that even these modest measures would not fully protect dental workers." CDC asserts.

Mercury is listed under Proposition 65 as causing birth defects and other reproductive harm.

Dentistry is the only medical profession to still use mercury and the industry knows "the end is near" on it, Brown adds. "The question is who should pull the trigger." That should be the Standards Board, CDC argues. Some dentists will tell the board to "butt out," he continues, "but we're asking you to butt in and pay attention to this issue."

Proponents of a mercury ban acknowledge there is a split among dentists, with just over half not using it anymore and slightly fewer still placing mercury fillings. Consultant Jeff Green, who introduced the petition asking for a "vertical standard" calling for engineering controls, said the "political polarization" surrounding the issue means that many dental workers aren't told about the potential hazards of the substance. For the board, not taking a position on the issue actually equates to taking a position in favor of mercury, he argues.

Dental hygienist Victoria DaCosta, of Santa Barbara, said she has worked with more than 600 dentists, yet not one has educated her about toxic material in dentist offices. She says she learned about mercury from a visiting dentist, who cautioned her not to use ultrasound equipment around mercury fillings. DaCosta did her own research and became an advocate for banning it. Not many dental hygienists are aware of the hazard, she adds, and newer techniques that put filling between teeth means that when hygienists use their water picks, "we're going to get more vapors than we've ever had before. I am not safe in my workplace."



Dentist Kevin Biggers called for personal protective equipment for dental-office workers. "We must act now," he said.

"I really want you to think about this when you go to see your hygienist," she told the board. "Is she being protected?"

CDC's Anita Vazquez Tibau gave emotional testimony on behalf of deceased dental assistant Debbie Seltenreich, who committed suicide after 10 years of battling multiple sclerosis, which Tibau suggests might have resulted from years of handling mercury, sometimes with her bare hands. She pointed out that dentists have the highest suicide rate of any profession, and wondered if that grim trend extends to assistants.

"Would things have been different if [Seltenreich] had been employed in another profession," Tibau asked. "Would things have been different if she was not exposed to such high levels of mercury for so many years? We are requesting that this board place a moratorium on mercury dental fillings for the protection of everyone in the profession. At the very least, the board should raise the safety standards."

Dentist David Kennedy, past president of the International Academy of Oral Medicine and Toxicology, cited research demonstrating a 40% decrease in the ability of female dental assistants in California to conceive after having worked in offices that used amalgams. "We have case-controlled studies now showing that injury occurs," Kennedy said. The evidence "cries out for a vertical standard. We're asking what any other citizen in the state of California would."

Kevin Biggers, another dentist and former member of the Dental Board of California, agreed. "We must act now to protect the dental workers. Dentists should do what other employees do when they have mercury in the workplace. They should have breathing devices, full-body clothing and protective gloves." He also accused California's dental establishment of working "overtime" to prevent information about mercury from getting to workers.

In pressing their case for a standard for placement, removal and polishing of dental mercury amalgam, Yokoyama, Kennedy and Green said the threat to workers "is no longer a matter of speculation. Dental procedures involving the use and manipulation of mercury are so inherently dangerous that they represent extreme risk to employees. When released as a gas, the substance can destroy neurons, and causes fetal death, neurological harm and dysmenorrhea."

The dental groups call for "an immediate order" requiring the following:

No mercury fillings to be implanted in dental patients in California, including patients at dental schools.

When removing mercury fillings, workers would be required to wear:

- Small-particulate masks or respirators
- DuPont Tychem fabric covering over all clothes and skin
- Full hair covering
- Nitrile or Silver Shield gloves – no latex

The petition also asks the board to require warnings posted in dental offices about the hazard to unborn children.

Consumers for Dental Choice has cited a number of studies to bolster its case for banning mercury from dentistry. Look for copies of the research papers in the Resources section at www.cal-osh.com.